Multicentre study of cancer pain and its treatment in France

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Abstract

***Objective*—To describe the treatment of cancer pain in France and to evaluate the predictive factors for inadequate management.**

***Design*—Multicentre, representative cross sectional survey.**

***Setting*—20 treatment centres, including cancer centres, university hospitals, state hospitals, private clinics, and one homecare setting (in which patients are supported at home).**

***Subjects*—605 patients with cancer.**

***Main measures*—Patients rated prevalence and severity of pain and functional impairment related to pain. Doctors reported patients' cancer characteristic, performance status, pain severity, and analgesic drugs ordered.**

***Results*—57% (340/601) of patients with cancer reported pain due to their disease, and, of those with pain, 69% (224/325) rated their worst pain at a level that impaired their ability to function. 30% (84/279) were reported as receiving no drugs for their pain. Of the 270 patients in pain for whom information on treatment was available 51% (137/270) were not receiving adequate pain relief, according to an index based on the World Health Organisation's guidelines. French doctors were found to underestimate the severity of their patients' pain. Younger patients, patients without metastatic disease, patients with a better performance status, and patients who rated their pain as more severe than their doctors did were at greater risk for undertreatment of their pain.**

***Conclusions*—In the light of the high prevalence and the severity of pain among patients with cancer, the assessment and treatment of cancer pain in France remain inadequate, emphasising the need for changes in patient care.**

Introduction

It is estimated that millions of patients with cancer worldwide experience moderate to severe pain.[1,2] The prevalence and severity of cancer pain vary depending on type of tumour, stage of disease, presence and location of metastases, and adequacy of pain treatment.[3-5] Studies of cancer pain conducted in the United States show that it is often inadequately treated.[6,7] In France approximately 200 000 new cases of cancer are diagnosed each year. Despite an increase in attention to the treatment of pain in France,[8-10] and the publication by the French government of clinical guidelines on pain and palliative care in 1986,[11,12] no information about the prevalence, severity, and treatment of pain in patients with cancer in France is available. We aimed at providing baseline data on the adequacy of management of cancer pain from the perspective of patients and their doctors. This is part of a more extensive project that includes evaluation of both professional and public attitudes towards the control of cancer pain in France.

Patients and methods

A representative sample of 605 patients with cancer was drawn from 20 treatment settings throughout France. Sample institutions were selected from the five regions of France with populations of at least 10 million inhabitants, as defined by the National Institute of Statistics and Economic Studies (INSEE). The institutions comprised five cancer treatment centres, four university hospitals, five state hospitals, five private clinics, and one home care setting (a service in the Paris region which support patients in their home). The different types of medical facilities were equally represented in the five regions. The sample was designed to yield enough patients in each setting to permit a reliable comparison between settings. Once the study began, in June 1991, each site was asked to enrol consecutively the first 30 patients (inpatients and outpatients) aged 18 and over in whom cancer had been diagnosed. The sites were randomly selected from the 1989 French directory on cancer (*Annuaire de la Cancérologie Française*).

Each inpatient facility considered including in the study all patients admitted in whom cancer had been diagnosed, starting on day 1 of the study. In outpatient clinics two patients were considered for inclusion for each half day of consultations. If n patients were expected in the clinic then every n/3 patient was asked to participate; if a patient refused or did not meet the study's criteria the next patient was considered. In each site the proportion of patients who were admitted or seen as outpatients varied.

The national coordinator for the study, a research nurse, travelled to each site to explain the study's methodology and to train a local coordinator who was responsible for patient selection, consent forms, and distribution and collection of questionnaires.

The brief pain inventory is an instrument for evaluating pain developed by the Pain Research Group at the University of Wisconsin-Madison that can assess the intensity and characteristics of pain and determine the impact of pain on important aspects of a patient's life.[13] The brief pain inventory uses a 10 point scale (0="no pain"; 10="pain as bad as you can imagine") to evaluate intensity of pain at the time of being surveyed, pain at its worst, pain at its least, and pain on average in the past week. The inventory also asks patients to rate how their pain interferes with daily life, including level of activity, walking, mood, sleep, work, and relations with others. We used the "questionnaire concis sur les douleurs"[4] (a validated French translation of the brief pain inventory, S M Colleau *et al*).

Inpatients were asked to complete the questionnaire within the first 48 hours of admission, and outpatients were asked to complete it in the waiting room before their consultation. The local coordinator was available to patients who needed help. No patient completed the questionnaire in the presence of his or her doctor. Doctors completed a similar questionnaire after having seen the patient, without knowing the patient's responses to the questionnaire. The study's protocol required the patient's and the doctor's questionnaires to be completed within 48 hours of each other.

Pain has a greater impact on a patient as it becomes more severe and interferes more with daily activities. Pain rated as 5 or higher on a scale of 0 to 10 corresponds to interference with function.[14,15] In our study pain at its worst that was rated by patients as 5 or higher was defined as significant pain.

Patients gave informed consent before completing the questionnaire. Doctors familiar with a patient

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recorded details of the patient's cancer and the analgesic drugs that the patient was taking and gave their ratings of the patient's anxiety, depression, performance status (on the Karnofsky scale, a 10 point scale) and their own rating of the patient's average pain severity in the previous week. Differences between the patients' and the doctor's ratings of average pain severity were indexed on a discrepancy scale ranging from −10 to 10, with negative ratings indicating underestimation of pain severity by the doctor.

TABLE I—*Patients with pain due to cancer, by type of cancer. Values are percentages (proportions) unless stated otherwise*

Type of cancer	Total No	Pain during past week*	Pain at its worst ≥5*†
Breast	211	56 (117/209)	67 (74/111)
Gastrointestinal	108	56 (59/106)	77 (44/57)
Genitourinary	80	58 (46/80)	63 (29/46)
Lung	77	58 (45/77)	72 (31/43)
Head and neck	57	67 (38/57)	69 (25/36)
Lymphoma	26	35 (9/26)	71 (5/7)
Other	46	57 (26/46)	64 (16/25)
Total	605	57 (340/601)	69 (224/325)

*No patient answered every question; patients were excluded if their responses or those of their doctors were incomplete on these variables.
†On scale of 0 to 10 where 0 = no pain and 10 = extreme pain.

TABLE II—*Severity of cancer pain* in 529 patients with cancer by site of primary disease and stage of disease*

Type of cancer	No of patients	Mean (SD) average pain	Mean (SD) worst pain
Breast:			
No metastasis	83	4·08 (2·14)	5·22 (2·31)
Metastasis	126	4·99 (2·52)	5·95 (2·55)
Gastrointestinal:			
No metastasis	39	3·80 (2·01)	5·40 (2·53)
Metastasis	67	4·57 (2·03)	6·19 (2·45)
Genitourinary:			
No metastasis	18	3·22 (3·15)	5·56 (2·88)
Metastasis	62	4·83 (2·41)	6·00 (2·64)
Lung:			
No metastasis	38	4·86 (1·85)	6·29 (2·51)
Metastasis	39	4·78 (2·21)	6·00 (2·58)
Head and neck:			
No metastasis	35	4·25 (2·36)	5·25 (2·61)
Metastasis	22	4·88 (2·63)	6·06 (3·00)

*Index ranges from 0 (no pain) to 10 (extreme pain).

TABLE III—*Drug treatment of cancer pain* in 273 patients with cancer by severity of pain. † Values are numbers (percentages) of patients*

Treatment	Mild (n=77)	Moderate (n=61)	Severe (n=135)
None	47 (61)	15 (25)	15 (11)
Aspirin type	11 (14)	12 (20)	11 (8)
Codeine type	12 (16)	23 (38)	54 (40)
Strong opioids	7 (9)	11 (18)	55 (41)

*According to doctors' reports of strongest pain relief prescribed.
†No patient answered every question; patients were excluded if their responses or those of their doctors were incomplete treatment variables.

TABLE IV—*Percentage (proportion) of patients with pain due to cancer who had negative score on pain management index,* by type of cancer*

Type of cancer	Negative score
Breast	57 (50/88)
Gastrointestinal	45 (22/49)
Genitourinary	60 (24/40)
Lung	40 (15/38)
Head and neck	36 (10/28)
Lymphoma	71 (5/7)
Other	55 (11/20)
Total	51 (137/270)

*Very conservative indicator of undertreatment. See text for explanation of index.

Results

The 605 patients were distributed among the treatment settings as follows: cancer centres, 148; university hospitals, 159; state hospitals, 131; private clinics, 148; home care setting, 19. In all, 239 patients were inpatients and 302 were outpatients (data were missing for 64 patients). Of the 605 patients, 601 (99%; 347 women, 252 men, two sex not known (mean age 57·8 (SD 14) years)) completed the questionnaire. No patient answered every question. In all, 57% (340/601) of patients said that they had experienced pain during the past week due to their cancer or rated their pain above 0 on the 10 point scale (table I).

PREVALENCE AND SEVERITY

Of the 340 patients who reported pain, 65% (220) had metastatic disease. Pain was more common in patients with metastases than in patients without. Of 325 of the patients with pain, 69% (224) reported significant pain (worst pain rated as 5 or higher) in the past week, while 54% (174) rated their average pain as 5 or higher (table I). Overall, patients with metastases reported a more severe pain than those without (table II).

TREATMENT OF CANCER PAIN

The World Health Organisation's recommended method of deciding on pain relief for cancer uses pain severity as the primary item of information in specifying treatment. Preferred analgesic drugs change as pain increases in severity: non-opioid analgesic drugs (such as aspirin and paracetamol (acetaminophen)), for mild to moderate pain; codeine or dextropropoxyphene for patients with moderate pain; and a group of more potent opioids, such as morphine and similar drugs, for patients with severe pain.

In all, 84 of the 279 (30%) patients who reported pain and whose doctors reported information about treatment were not getting any drugs for pain relief. Of the remaining 195 patients who were given drugs for pain relief, 30 (15%) were reported by their doctors as managing with aspirin or paracetamol, 91 (47%) were receiving codeine-type drugs, and 74 (38%) were taking morphine or a similar analgesic drug.

Table III shows a comparison of the pharmacological management of cancer pain and the level of pain severity. The data are based on doctors' reports of the strongest pain relief they prescribed.

ADEQUACY OF PAIN MANAGEMENT

To determine the extent to which the patients were adequately managed for their pain, a pain management index was used.[6 13] The index compares the analgesic drug used by a patient (labelled according to its conventional position on the WHO's analgesic ladder) with the level of reported pain. The patients' levels of pain were determined from the rating of worst pain on the questionnaire (1-3, mild; 4-7, moderate; 8-10, severe). Pain scores were categorised as 0 for no pain, 1 for mild pain, 2 for moderate pain, 3 for severe pain. The analgesic drugs prescribed were scored as 0 for no drugs for pain relief; 1 for non-opioids—for example, non-steroidal anti-inflammatory drugs or paracetamol; 2 for weak opioids—for example, codeine; 3 for strong opioids—for example, morphine. The index is computed by subtracting the pain score from the analgesia score. It ranges in value between −3 (patient with severe pain receiving no analgesic drugs) and 3 (patient receiving morphine or similar opioids and reporting no pain). Negative scores are a very conservative indicator of undertreating. In all, 133 of the 270 (49%) patients with pain and for whom information was available received adequate pain management according to this index, while the remaining 137 (51%) did not (table IV).

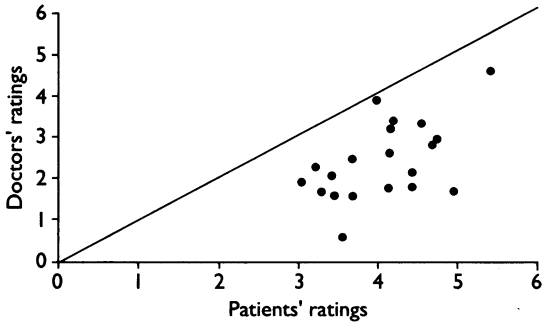
SELF REPORT VERSUS DOCTOR'S REPORT OF PAIN

The cancer patients' rating of average pain was compared with the rating given by each clinic's doctors. The diagonal in the figure represents a theoretically "perfect" correlation between a patient's rating and the rating of the institution where they were treated. Each dot represents a group of at least 10 patients treated at one institution. Across all types of institutions all patients consistently rated their pain as being more severe than their doctors did, indicating that French doctors underestimate the severity of their patients' cancer pain.

FACTORS CONTRIBUTING TO UNDERTREATMENT

Several factors may contribute to the undertreatment of pain in patients with cancer in France. Some factors

may be related to the patients themselves, including their age, sex, status as inpatient or outpatient, and status of their disease. Other factors may be related to the doctors who care for them, including these doctors' assessment of pain severity and performance status. To determine the contribution of these factors to inadequate treatment for pain these variables were entered into a stepwise multiple regression analysis with the pain management index as the outcome variable (table V). Four variables were found to predict index scores: discrepancy between the patient's and the physician's rating of pain severity ($P<0.0001$), presence of metastases ($P<0.001$), age ($P<0.005$), and performance status ($P<0.006$). Patients were more likely to receive inadequate treatment for pain if they rated their pain as being more severe than their doctors did, did not have metastases, were younger, and had a better performance status. Discrepancy between patient and doctor in estimating pain severity was the strongest predictor of undermanagement (standardised regression coefficient = −0·3493). The unstandardised regression coefficients show how much the increases (or decreases) in the pain management index were associated with a corresponding increase (or decrease) in a particular predictor, keeping all other predictor variables constant. Together these factors were found to explain almost 34% of the variance in the undermanagement of pain ($r^2=0.338$).



Comparison of patients' ratings of average pain with those of doctors; each dot represents a group of at least 10 patients at one institution

TABLE V—*Predictors of pain management index in patients with cancer in France*

	Unstandardised regression coefficient (95% confidence interval)	Standardised regression coefficient	P value
Performance status*	0·1046 (0·04 to 0·16)	0·2155	0·0001
Metastases†	−0·5238 (−0·78 to −0·25)	−0·2373	0·0001
Patient doctor discrepancy over pain severity‡	−0·1562 (−0·20 to −0·10)	−0·3493	<0·0001
Age	0·0128 (0·003 to 0·02)	0·1588	0·0006

$r^2=0.338$.
*Karnofsky scale, 1-10.
†Yes = 1; no = 2.
‡Scale −10 to 10.

Discussion

Our study has shown that the proportion of patients with cancer reporting pain related to their cancer (57%) is larger than may be commonly believed by health professionals in France, particularly as the sample came from mainstream institutions and not from specialised settings such as pain consultation units or palliative care units. Our study shows that pain is often of at least moderate intensity and interferes with quality of life from a moderate to severe degree. Our sample is representative and reflects the proportion of patients with pain in the general population of patients with cancer in France.

Why are patients undertreated? Our data suggest that assessment of pain is poor. The discrepancy between the patient's and the physician's assessment of cancer pain is particularly striking. This finding has potential clinical implications. Firstly, simple tools for assessing pain, such as the brief pain inventory, are useful because they can help to standardise the reporting of pain by patients. Standard questions enable patients to report more easily the presence and the severity of pain and when treatment is not working.[14] Consistent tracking of pain can also serve to educate staff so that cases of severe pain that is inadequately treated can be routinely noticed by members of the pain management team.

Secondly, data on reported pain relief suggest that a sizeable proportion of patients with cancer would benefit from more aggressive analgesic treatment. In this sample a third of the patients with cancer were not receiving any drugs for their pain.

Overall, patients who are younger, seem less ill (have better performance status), do not have metastases, and who rate their pain as being more severe than their doctors do are consistently less well treated for their pain. Some of these findings corroborate data from a multicentre study in the United States,[6] which also found that discrepancy in judging pain severity between patient and doctor increases risk for inadequate pain management.

Determining the prevalence and severity of pain is a necessary step in evaluating existing health policy on the care of patients with cancer. Although several initiatives are now in place,[10] a national programme for the control of cancer pain does not yet exist in France. This survey brings the first concrete results against which to evaluate current and future policy on the control of cancer pain.

Key messages

- Pain is a common and debilitating symptom for patients with recurrent or metastatic cancer
- Data on prevalence, severity, and treatment of pain in patients with cancer are fragmentary
- This national French study shows that pain is present in over half of cancer patients, that more than two thirds rate their worst pain as impairing their ability to function, and that half of patients in pain do not receive adequate treatment
- Doctors underestimate the severity of their patients' cancer pain and provide inadequate treatment
- These results are useful baseline data against which to evaluate future programmes for the control of cancer pain in France

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Incidence of acute symptomatic toxoplasma retinochoroiditis in south London according to country of birth

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Abstract

***Objective*—To determine the incidence of acute symptomatic toxoplasma retinochoroiditis presenting to ophthalmologists for patients born in Britain and elsewhere.**

***Design*—Population based, cross sectional study.**

***Setting*—11 districts in south Greater London.**

***Subjects*—All patients presenting to NHS ophthalmologists with symptoms due to acute toxoplasma retinochoroiditis in 1992-3.**

***Main outcome measure*—Intraocular inflammation in association with a retinochoroidal scar, active adjoining retinitis, and IgG serum antibodies to toxoplasma.**

***Results*—The estimated incidence of acute symptomatic retinochoroiditis for all people born in Britain was 0·4/100 000/year and for black people born in west Africa 57/100 000/year. If a mean of two symptomatic episodes per lifetime is assumed, 100 people born in Britain may be affected each year, about a fifth of the estimated 500-600 congenitally infected people born each year.**

***Conclusions*—A substantial proportion of people with acute symptomatic toxoplasma retinochoroiditis were born outside the country, and the number born in Britain was smaller than the number previously estimated to develop retinochoroidal lesions due to congenital toxoplasmosis. These findings suggest that prenatal screening for toxoplasmosis in Britain may be of limited benefit.**

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Introduction

Evidence from clinic based follow up studies suggests that retinochoroidal lesions occur in over 80% of people with congenital toxoplasmosis.[1-3] The proportion of affected people who develop ocular symptoms in the long term, however, is not known. Retinochoroidal lesions may be asymptomatic for long periods of time until reactivation of latent toxoplasma cysts in the retina leads to symptoms of acute retinochoroiditis, which usually requires urgent ophthalmological attention. Acute toxoplasma retinochoroiditis is diagnosed clinically by a characteristic appearance.[4,5] In some people retinochoroidal lesions may be present from infancy and, if the macula is affected, can lead to permanent visual impairment in early childhood, whereas symptoms of acute retinochoroiditis may not occur until lesions reactivate in the second, third, or four decades.[6]

Toxoplasma retinochoroiditis is generally attributed to congenital infection but cannot be distinguished from lesions due to acquired infection unless there is clinical or serological evidence of congenital or recently acquired infection.[3,6-8] If we assume that people with early macular lesions eventually experience symptoms due to reactivation of retinochoroidal lesions, the incidence of acute symptomatic retinochoroiditis should represent an upper limit for the birth prevalence of congenital toxoplasma infection resulting in symptoms due to toxoplasma retinochoroiditis in the long term. A recent report from a Royal College of Obstetricians and Gynaecologists' working party on prenatal screening for toxoplasma infection recommended that more information on the prevalence of long term effects in those congenitally infected was required to determine the balance of potential risks and benefits of screening.[9]

We established a reporting system to identify all cases of acute symptomatic toxoplasma retinochoroiditis in south London. The incidence of acute toxoplasma retinochoroiditis was calculated according to country of birth using the 1991 census, and the likelihood of long term effects was estimated in congenitally infected people born in Britain.

Subjects and methods

All adults and children who attended any of the nine NHS ophthalmology units (including eye clinics and eye casualty departments) within the study area (see figure) were identified prospectively for one year, October 1992 to September 1993.

Ophthalmologists at all nine units agreed to participate, and the study protocol was discussed personally and in detail with consultants and all middle grade medical staff at each of the units before the start of the study. Throughout the study two of us (MRS and HJ) were in regular clinical contact with all the units. As some residents may have been seen at tertiary referral centres in north London, consultants specialising in uveitis at Moorfields Eye Hospital, the Western Ophthalmic Hospital, and Great Ormond Street Hospital for Children were included in the study protocol.

Ophthalmologists were asked to report all cases